

## **ABSTRACT**

The present invention relates to a solid supported catalyst usable for the polymerization of conjugated dienes, to a process for the preparation of said catalyst and to a process for the polymerization of conjugated dienes using said catalyst. The solid supported catalyst according to the invention comprises the reaction product of

a) a complex represented by formula M(Ar)(AlX<sub>4</sub>)<sub>3</sub>, where M is a rare earth metal selected from among the metals having an atomic number of between 57 and 71 in Mendeleev's periodic table of elements, Ar is an aromatic hydrocarbon solvent, Al is aluminum and X is a halogen selected from among fluorine, chlorine, bromine and iodine, and

b) a solid support comprising at least one inorganic metal oxide compound. The invention also provides a polymerization process for conjugated dienes in an inert hydrocarbon solvent in which the said catalyst is used to polymerize the conjugated dienes in the presence of an activator compound comprising a trialkylaluminum or dialkylaluminum hydride.